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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,569	12/21/2004	Carl L. Christensen	PU020298	6833
Joseph S Tripoli Thomson Licensing Inc P O Box 5312 Princeton, NJ 08543-5312				
7590 10/23/2009			EXAMINER MALEK, LEILA	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 10/23/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,569

Applicant(s)

CHRISTENSEN ET AL.

Examiner

LEILA MALEK

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/05/2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (W098/16040) (see the IDS) and Knapp et al. (hereafter, referred as Knapp) (US 6,005,904), further in view of Lydon et al. (hereafter, referred as Lydon) (US 6,757,302).

As to claim 1, Adams discloses a method for extracting selected time information from a stream of serialized digital audio data (see page 3, lines 19-31 and page 4, lines 26-27), comprising: detecting a first transition indicative of a first preamble of the stream of serialized AES digital audio data (see page 3, lines 29-31, where Adams describes that each preamble begins with a violation of the biphasic-mark encoding rule that each

cell is bordered by a transition, and also see page 4, where Adams discloses that the violations have been detected (detection of violations have been interpreted as detection of a first and second preamble)); detecting a second transition indicative of a subsequent preamble of the serialized AES digital audio data; and determining a time separating the first and second transitions (see page 4, lines 26-27). Adams discloses transferring the determined time information to a decoding logic circuit (see page 1, lines 12-13). Adam discloses all the subject matters claimed in claim 1, except for decoding the data by utilizing the determined time and that the extracting time information (i.e. the steps of detecting and determining) has been performed by a broadcast router. Knapp discloses a decoder 42 (see column 5, lines 1-28) at the receiver of a communication system, where the decoder continuously decodes the input signal and signals the occurrence of a pattern that matches a predetermined set of valid preambles. Knapp further discloses that the decoder 42 is designed to decode a specific set of bits within the preambles. If that set does not occur for a set period of time, possibly indicated by a certain count within counter 44, then the lock/unlock signal will indicate an unlock condition. Counter 44 is a modulo N counter where N clock cycles is the time period between preambles. If a valid preamble is detected after exactly N clock cycles, decoder 44 indicates one valid preamble has been detected. Therefore Knapp clearly teaches decoding the data utilizing the determined time between the preambles. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Adams as suggested by Knapp to use the determined time between the preambles to decode the signal, to increase the performance of the

decoder by using a more accurate clock. Adams and Knapp disclose all the subject matters claimed in claim 1, except that that the extracting time information (i.e. the steps of detecting and determining) has been performed by a broadcast router. Lydon, in the same field of endeavor, discloses a router, wherein each input of the router is connected to an input processor 14 (see column 1, last paragraph and column 4, lines 29-35). Lydon further discloses that each input processor includes an AES3 receiver 18, which is of conventional form and detects the code violation and locks to the biphase data stream, decodes the biphase mark data to unframed NRZ form, generates output clocks for control purposes and generates overhead bits. Lydon further discloses that the router is a broadcast router (see column 1, third paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Adams in a broadcast router to take advantage of a self-clocking technique (see Adams pages 2-5).

As to claim 4, Adams, on page 11, lines 26-28, discloses that the time information is determined in the form of a clock pulse count separating the first and second transitions, wherein the clock pulse count is a count of clock pulses. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Adams' background of invention as suggested in Adams' invention disclosure to allow the system to adjust the timing of the clock if necessary (see page 11, lines 28-30).

As to claim 5, Adams does not expressly disclose that the first transition and second transition are separated by thirty one intervening transitions, wherein said thirty one intervening transitions are not indicative of said subsequent preamble of said

serialized AES digital audio data. However, it is extremely well known in the art that each sub-frame of AES digital audio data includes 32 bits starting with a preamble, therefore inherently the first transition and second transition are separated by thirty one intervening transitions (i.e. the distance from the preamble in the first sub-frame to the preamble in the second sub-frame), wherein said thirty one intervening transitions are not indicative of said subsequent preamble of said serialized AES digital audio data.

3. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams, Knapp, and Lydon, further in view of Lyle et al. (hereafter, referred as Lyle) (US 7,295,578).

As to claim 6, Adams, Knapp and Lydon do not disclose that the determined time information is also suitable for use in encoding the stream. Lyle, in the same field of endeavor, discloses a communication system comprising a transmitter and a receiver (see Fig. 21), wherein a communication link between the transmitter and the receiver feeds back an audio clock signal generated at the receiver (see column 25, lines 56-57) to an encoder of the transmitter (see Fig. 29). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Adams, Knapp, and Lydon as suggested by Lyle to send the clock used for decoding the data to the transmitter to synchronize the clocks used for encoding and decoding.

As to claim 7, Lyle discloses transferring the determined time information to an encoding logic circuit for use in encoding the stream of audio data (see Figs. 21 and 29 and column 25, lines 56-57). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Adams, Knapp, and Lydon as suggested by Lyle to

send the clock used for decoding the data to the transmitter to synchronize the clocks used for encoding and decoding.

As to claim 8, Adams, on page 11, lines 26-28, discloses that the time information is determined in the form of a clock pulse count separating the first and second transitions. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Adam's background of invention as suggested by Adams to allow the system to adjust the timing of the clock if necessary (see page 11, lines 28-30).

As to claim 9, Adams does not expressly disclose that the first transition and second transition are separated by thirty one intervening transitions, wherein said thirty one intervening transitions are not indicative of said subsequent preamble of said serialized AES digital audio data. However, it is extremely well known in the art that each sub-frame of AES digital audio data includes 32 bits (for instance see Lydon lines 25-35) starting with a preamble, therefore inherently the first transition and second transition are separated by thirty one intervening transitions (i.e. the distance from the preamble in the first sub-frame to the preamble in the second sub-frame), wherein said thirty one intervening transitions are not indicative of said subsequent preamble of said serialized AES digital audio data.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al. (hereafter, referred as Scott) (US 6,654,409), in view of Adams.

As to claim 10, Scott discloses an apparatus comprising: a decoder circuit (see blocks 707 and 708) coupled to receive a stream of serialized (see column 4, lines 27-

28) digital audio (i.e. the telephony signal) data (see column 15, lines 24-36), the decoder circuit (combination of blocks 707 and 708) extracting time information from the stream of digital audio data during the decoding thereof; and a target component (see block 712) coupled to the decoder circuit, the target component receiving the extracted time information from the stream of serialized digital audio data; wherein the target component utilizes the extracted time information while executing at least one function (i.e. encoding) thereof (see column 15, lines 55-56). Scott further discloses that the extracted time information is also utilized, by the decoder circuit, to decode the received stream of serialized digital audio data (see column 15, lines 30-32 time base of the decoder helps the decoder to decode the signal). Scott discloses all the subject matters claimed in claim 10, except that the signal has been encoded according to AES standard. Scott also does not disclose that the time information is based on determining a time separating a first transition, indicative of a first preamble of said stream of serialized AES digital audio data, and a second transition, indicative of a second preamble of said stream of serialized AES digital audio data. However, using AES standard as an encoding standard for digital audio signals is extremely well known in the art (as evidence by Adams page 1, lines 17-27) and therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use AES standard in the system disclosed by Scott to facilitate data transmission between communication devices. Regarding to the second set of limitations missing from Scott, Adams further discloses an apparatus for extracting selected time information from a stream of serialized digital audio data (see page 3, lines 19-31 and page 4, lines 26-27) by

detecting a first transition indicative of a first preamble of the stream of serialized AES digital audio data (see page 3, lines 29-31, where Adams describes that each preamble begins with a violation of the biphasemark encoding rule that each cell is bordered by a transition, and also see page 4, where Adams discloses that the violations have been detected (detection of violations have been interpreted as detection of a first and second preamble)); detecting a second transition indicative of a subsequent preamble of the serialized AES digital audio data; and determining a time separating the first and second transitions (see page 4, lines 26-27). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Scott as suggested by Adams to take advantage of a self-clocking technique (see Adams page 2, lines 13-19).

5. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller (US 6,772,021), in view of Lydon.

As to claim 12, Fuller discloses a method comprising: detecting a first transition of the stream of serialized AES digital audio data (see the abstract, column 1, lines 7-9, 29-34, 48-51, column 2, lines 21-34 and column 3); determining the interval between preambles (see column 2, lines 27-34 and column 3), counting a number of clock pulses of a clock from the detecting of the first transition of the serialized AES digital audio signal in the determined interval (see column 3, first paragraph), and outputting the clock count to a decoding logic circuit (see Fig. 1, blocks 30, 32, and 60, column 2, lines 27-34 and column 3, lines 3-4). Fuller discloses all the subject matters claimed in claim 12, except that that the extracting time information (i.e. the steps of detecting and determining) has been performed by a broadcast router. Fuller also does not disclose

that the interval between the preambles has been determined by counting a number of transitions of the serializer AES digital audio data from the first transition until the number of transition reaches a count of 33. As to the first limitation, Lydon, in the same field of endeavor, discloses a router, wherein each input of the router is connected to an input processor 14 (see column 1, last paragraph and column 4, lines 29-35). Lydon further discloses that each input processor includes an AES3 receiver 18, which is of conventional form and detects the code violation and locks to the biphasic data stream, decodes the biphasic mark data to unframed NRZ form, generates output clocks for control purposes and generates overhead bits. Lydon further discloses that the router is a broadcast router (see column 1, third paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Adams in a broadcast router to take advantage of a self-clocking technique (see Adams pages 2-5). As to the second limitation, Lydon discloses that the AES sub-frame contains 32 bits (see column 1, lines 25-35) starting with a preamble. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to count the number of transitions of the AES signal from the first transition until the number of transitions reaches a count of 33 (since it takes 33 counts to reach the preamble in the next sub-frame) to find the second preamble, and also the distance between the preambles, to simplify the detection of the preambles.

As to claim 13, Fuller discloses that the clock is a higher frequency than a frequency of the transitions of the serialized AES audio data (see column 2, lines 60-62).

As to claim 14, Fuller discloses that the clock is a fast clock (see column 2, lines 60-62, because the clock is preferably at least 4, and more preferably at least 8 or 16, times the rate of the audio data).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEILA MALEK whose telephone number is (571)272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek
Examiner
Art Unit 2611

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